Confirmation of Product Type Approval

Company Name: ENECON CORPORATION

Address: 6 PLATINUM COURT NY 11763 United States

Product: Ceramic-Like Composites

Model(s): METALCLAD CeramAlloy CP+ and METALCLAD CeramAlloy CL+

Certificate Type	Certificate Number	Issue Date	Expiry Date
Product Design Assessment (PDA)	15-HS1450416-PDA	09-MAY-2016	05-MAY-2021
Manufacturing Assessment (MA)	18-NY3568040	11-OCT-2018	10-OCT-2023
Product Quality Assurance (PQA)	NA	NA	NA

Tier
3

Intended Service
Marine & Offshore Application - Rebuilding surfaces damaged by Fluid Flow Erosion/Corrosion and protection of new Equipment from such damage.

Description
METALCLAD CeramAlloy CP+ (paste) and METALCLAD CeramAlloy CL+ (liquid) are two-component, 100% Solids, Polymer Composites formulated for Repair and Rebuilding of Fluid Flow Equipment.

Ratings
CeramAlloy CL+

Compressive Strength: 16,000 psi

Flexural Stength: 15,500 psi

Izod impact strength: 1.3 ft-lbs/in

Hardness – Rockwell: R107

Hardness - Shore D: 82

Tensile Sheer Adhesion

Steel: 2,400 psi

Aluminum: 2,500 psi

Copper: 1,950 psi

Stainless Steel: 2,700 psi

Surface resistivity: 1x10^15 ohms

Volume resistivity: 1x10^15 ohm/cm

Dielectric constant: 7.5

Dielectric strength: 652 volts/mil

Breakdown voltage: 6.1 Kv

CeramAlloy CP+

Compressive Strength: 14,000 psi

Flexural Stength: 15,500 psi

Izod impact strength: 1.3 ft-lbs/in

Hardness – Rockwell: R107

Hardness - Shore D: 82

Tensile Sheer Adhesion

Steel: 2,900 psi

Aluminum: 2,750 psi

Copper: 2,400 psi

Stainless Steel: 3,300 psi

Surface resistivity: 1x10^15 ohms

Volume resistivity: 1x10^15 ohm/cm

Dielectric constant: 7.5

Dielectric strength: 500 volts/mil

Breakdown voltage: 18.6 Kv

See attached "pdf" for more Technical details

Service Restrictions
Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

Comments
The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

1) All repairs are to be carried out in accordance with Manufacturer's Recommendations and procedures.

2) If the repair involves any pressure containing or force transmitting component, details of the proposed repair require ABS approval.

3) Marking of product:

Product/package shall be marked with manufacturer's name; ENECON CORPORATION (641044), 6 PLATINUM COURT, MEDFORD, NY, United States, and type designation.

Notes, Drawings and Documentation
Drawing No. Correspondence, Application Revalidation 15Oct22 Cert 00-HS124117B-1-PDA, Revision: -, Pages: 1

Drawing No. Correspondence, Dec of Conf 15Oct22_Cert 00-HS124117B-1-PDA, Revision: -, Pages: 1

Drawing No. Marine Applications of ENECON Products, Revision: -, Pages: 7

Drawing No. ENECON Corporation's Nuclear Power Plant Experiences, Revision: -, Pages: 10

Drawing No. ENECON Photo of application for Marine industries, Revision: -, Pages: 11

Term of Validity
This Product Design Assessment (PDA) Certificate 15-HS1450416-PDA, dated 06/May/2016 remains valid until 05/May/2021 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product.

Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA.

Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

ABS Rules
Rules for Conditions of Classification, Part 1 2016 Steel Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4;

2016 ABS Rules for Conditions of Classification, Part 1 – 2016 Offshore Units and Structures 1-1-4/9.7, 1-1-A2, 1-1-A3;

International Standards
NA

EU-MED Standards
NA

National Standards
ASTM D115 (Nov 2014)

ASTM D150 (Aug 2011)

ASTM D256 (May 2010)

ASTM D257 (Apr 2014)

ASTM D695 (Sep 2015)

ASTM D785 (Oct 2015)

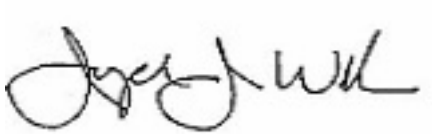
ASTM D790 (Apr 2010)

ASTM D1002 (Oct 2010)

ASTM D2240 (Jan 2010)

Government Standards
NA

Other Standards
NA



Corporate ABS Programs
American Bureau of Shipping
Print Date and Time: 03-Oct-2019 9:50

ABS has used due diligence in the preparation of this certificate, and it represents the information on the product in the ABS Records as of the date and time the certificate is printed.

If the Rules and/or standards used in the PDA evaluation are revised or if there is a design modification (whichever occurs first), a PDA revalidation may be necessary.

The continued validity of the MA is dependent on completion of satisfactory audits as required by the ABS Rules. The validity of both PDA and MA entitles the product to receive a **Confirmation of Product Type Approval**.

Acceptance of product is limited to the “Intended Service” details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or prior to the effective date of the ABS Rules and standards applied at the time of PDA issuance. ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. The manufacturer is responsible to maintain compliance with all specifications applicable to the product design assessment. Unless specifically indicated in the description of the product, certification under type approval does not waive requirements for witnessed inspection or additional survey for product use on a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.